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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,477	01/15/2004	Young Dae Kim	YHK-0131	4151
34610 7590 12/22/2008 KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200				
EXAMINER				
BODDIE, WILLIAM				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/757,477

**Applicant(s)**

KIM, YOUNG DAE

**Examiner**

WILLIAM L. BODDIE

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-7 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. In an amendment dated, September 2<sup>nd</sup>, 2008, the Applicant amended claim 1. Currently claims 1-3, 5-7 and 32 are pending.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 2<sup>nd</sup>, 2008 has been entered.

#### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-3, 5-7 and 32 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Objections***

4. Claim 1 is objected to because of the following informalities: the phrase "the second waveform applied during the second time interval that is a portion of the set-up interval of all or fewer than all of the remaining sub-fields" appears twice in the last paragraph of page 2 of the amended claims. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

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obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 5-7 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa et al. (US 6,667,579) in view of Applicant's Admitted Prior Art (hereinafter, APA).

**With respect to claim 1**, Kanazawa discloses, a method of driving a plasma display panel, comprising:

applying a first waveform (220V - -50V in fig. 18) to a sustain electrode (X1 electrode in fig. 18) during a first time interval (neighboring cell write period in fig. 18) included in an initial sub-field (SF1 in fig. 4; col. 11, lines 35-38) of one frame (A frame in fig. 4); and

applying a second waveform (170V- -50V in fig. 16) to a sustain electrode during a second time interval (neighboring cell write period in fig. 16) of all or fewer than all of the remaining sub-fields (col. 11, lines 37-39) following the initial sub-field, wherein the first waveform is different from the second waveform (clear from comparisons of fig. 16 and fig. 18), and the second waveform applied to the sustain electrode has a predetermined non-zero slope (note the 170V in fig. 16 slope) different from a non-zero slope of the first electrically floated waveform (different from the 220V in fig. 18 slope);

wherein the non-zero slope of the first waveform is greater than the predetermined non-zero slope of the second waveform (clear from the comparisons of the two waveforms in figs. 16 and 18), wherein the first waveform has a maximum peak voltage greater than a maximum peak voltage of the second waveform ( $220V > 170V$ ),

and wherein each of the remaining sub-fields other than the initial sub-field has a higher brightness weighting value than the initial sub-field (col. 2, lines 16-21).

Kanazawa does not expressly disclose applying rising and falling pulses to a scan electrode, nor does Kanazawa disclose set-up and set-down intervals.

APA discloses, applying a rising pulse to a scan electrode during a set-up interval of an initialization period, wherein the rising pulse changes to a second voltage after the rising pulse has changed to a first voltage, wherein the second voltage is higher than the first voltage (Y electrode waveform in fig. 5);

applying a falling pulse to a scan electrode during a set-down interval of the initialization period, wherein the falling pulse changes to a fourth voltage after the falling pulse has changed to a third voltage, wherein the third voltage is higher than the fourth voltage (Z electrode in fig. 5).

APA further discloses, applying a first waveform to a sustain electrode during a first time interval that is a portion of the set-up interval ( $T_d$  in fig. 5); such that the sustain electrode is electrically floated in the first waveform during the first time interval that is a portion of the set-up interval (fig. 5; page 6, line s4 – page 8, line 11 of the current specification), and

applying a second waveform to a sustain electrode during a second time interval that is a portion of the set-up interval (Z electrode pulse in fig. 3), such that the sustain electrode is supplied with substantially a ground voltage in the second waveform during the second time interval that is a portion of the set-up interval of all or fewer than all of the remaining sub-fields (fig. 3, page 4, lines 1-21 of the current specification).

Kanazawa and APA are analogous art because they are both from the same field of endeavor namely, driving waveforms for plasma display devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to supply the scan electrode pulses taught by APA to the panel of Kanazawa.

Furthermore it would have been obvious to one of ordinary skill in the art to apply waveforms during to a sustain electrode during a portion of a set-up interval.

The motivation for doing so would have been increased contrast and less chance of brightness misfires (APA; page 6, lines 8-10).

**With respect to claim 2**, Kanazawa and APA disclose, the method as claimed in claim 1 (see above).

Kanazawa further discloses, wherein said initial sub-field is at least one sub-field including the first sub-field of said frame (col. 11, lines 35-37).

**With respect to claim 5**, Kanazawa and APA disclose, the method as claimed in claim 1 (see above).

Kanazawa, when combined with APA, discloses the set-up interval is for forming wall charges within on rot more cells by a writing discharge, and the set-down interval is for erasing a portion of said wall charges by an erasure discharge (APA; clear from fig. 5; also see page 6, line 4 – page 8, line 11 of the current specification).

**With respect to claim 6**, Kanazawa and APA disclose, the method as claimed in claim 5 (see above).

Kanazawa, when combined with APA, discloses wherein wall charges within one or more cells are formed by a writing discharge during the set-up interval in each

initialization period (APA; fig. 3) of the remaining sub-fields other than the initial sub-field, and wherein the set-down interval in each initialization period of the remaining sub-fields a portion of said wall charges are erased by an erasure discharge (APA; also see page 4, lines 1-21 of the current specification).

**With respect to claim 7**, Kanazawa and APA disclose, the method as claimed in claim 1 (see above).

Kanazawa, when combined with APA, discloses wherein the sustain electrode is electrically floated during a shorter time than said first time interval in the set-up interval (APA; seems clear from a comparison between fig. 3 and fig. 5, that the sustain electrode is floated for a shorter time in the fig. 3, sub-field.).

**With respect to claim 32**, Kanazawa and APA disclose, the method as claimed in claim 1 (see above).

Kanazawa further discloses wherein the initial sub-field has a brightness weighting value less than one half a maximum brightness weighting value (clear from fig. 4 and col. 2, lines 18-20) that the sustain period of  $2^{10}$  is more than twice as large as the sustain period of  $2^0$ ; thereby corresponding to less than one half a maximum brightness).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanazawa et al. (US 6,667,579) in view of Applicant's Admitted Prior Art (hereinafter, APA) and further in view of Matsumoto et al. (US 5,854,540).

**With respect to claim 3**, Kanazawa and APA disclose, the method as claimed in claim 2 (see above).

Neither Kanazawa nor APA expressly disclose wherein the initial sub-field is the first and second sub-fields.

Matsumoto discloses, wherein said initial sub-field is the first and second sub-fields of said frame (fig. 13 shows the order of the sub-fields, col. 25, lines 10-11 confirms that the second sub-field is indeed the sub-field that succeeds the first sub-field of the frame).

Matsumoto, Kanazawa and APA are analogous art because they are both from the same field of endeavor namely, driving waveforms for plasma display devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to apply the different initialization waveforms of Kanazawa and APA to the subfields as taught by Matsumoto.

The motivation for doing so would have been to decrease the number of priming pulses and enhancing the contrast without appreciable degradation in the quality of the image (Matsumoto; col. 25, lines 45-47, 57-58).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone



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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sumati Lefkowitz/  
Supervisory Patent Examiner, Art Unit 2629

/William L Boddie/  
Examiner, Art Unit 2629  
12/22/08